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Journal of the Society of Arts.

FRIDAY, NOVEMBER 7, 1862.

◆

NOTICE TO MEMBERS.

The One-Hundred-and-Ninth Session of the Society will commence on Wednesday, the 19th November, at 8 o'clock, when Sir THOMAS PHILLIPS, F.G.S., Chairman of the Council, will deliver the Opening Address. The Chair will be taken at Eight o'clock on the following Wednesday Evenings:—

1862.	November	—	—	19	26	
,,	December	3	10	17	—	—
1863.	January	—	14	21	28	
,,	February	4	11	18	25	
,,	March.......	4	11	18	25	
,,	April	—	8	15	22	29
,,	May..................	6	13	20	27	
,,	June..................	—	—	—	24*	

For the Meetings previous to Christmas, the following arrangements have been made:—

NOVEMBER 19.—Opening Address by Sir THOMAS PHILLIPS, F.G.S., Chairman of the Council.

⁂ *On this evening the Medals which were awarded by the Council for Papers read at the Weekly Evening Meetings during the last Session, will be distributed.*

NOVEMBER 26.—" On the Utilization of Peat, with reference more particularly to the Manufacture of Hydro-Carbon Oils." By B. H. PAUL, Ph.D.

DECEMBER 3.—" On Thompson's Process of Boatbuilding by Machinery." By D. PUSELEY. Illustrated by Models.

DECEMBER 10.—" On the Construction of Labourers' Cottages and Sanitary Building Appliances." By JOHN TAYLOR, Jun., Architect. On this evening General Tremenheere will preside.

DECEMBER 17.—" On the Mines and Minerals of the United Kingdom." By ROBERT HUNT, F.R.S., Keeper of Mining Records, Government School of Mines.

GENERAL INDEX.

A general Index to the first ten volumes of the *Journal* will shortly be published, which should be bound with the present volume. Members who desire to have copies are requested to apply to the Secretary before the 1st of December, in order that a sufficient number may be printed.

NOTICE TO INSTITUTIONS.

A limited number of copies of a pamphlet, by Mr. Henry Roberts, F.R.I.B.A., " On the Essentials of a Healthy Dwelling, and the Extension of its Benefits to the Labouring Population, with a Special Reference to the Promotion of that Object by H.R.H. the late Prince Consort," has been placed at the disposal of the Council for distribution amongst the Institutions in Union. Any Institution desiring to have a copy should apply to the Secretary.

INTERNATIONAL EXHIBITION OF 1862.

REPORTS OF THE JURIES.

The Council of the Society of Arts have felt the importance of having some permanent and authoritative Record of the International Exhibition, and finding that Her Majesty's Commissioners have provided only for the publication of the awards of the Juries, but not of their Reports descriptive of the Progress of Industry since the Exhibition of 1851, the Council have undertaken this work, with the co-operation of Her Majesty's Commissioners and of the Juries, and have placed the matter in charge of Dr. Lyon Playfair, the Special Commissioner of the Juries.

The Reports will be published in super royal octavo, to range with the one-volume Jury Reports of 1851. The price of the volume, bound in cloth, to Members of the Society of Arts, to Jurors, and Guarantors, is fixed at 10s.; to other persons, 15s. If bound in morocco, 7s. 6d. additional in each case.

Forms of application for copies have been issued to Members of the Society, to Jurors, and to Guarantors.

It was the intention of the Council to issue the volume complete in the early part of September, but as several of the Reports have not yet been received by Her Majesty's Commissioners, the completion of the entire work has been unexpectedly delayed; the Council, however, unwilling to defer the publication of the Reports already completed, have issued to the subscribers those that have been received up to the present time. When all the Reports are delivered, the parts now issued to subscribers will be exchanged, if uninjured, for the perfect volume, bound or unbound, as desired. Individual reports are sold separately; for prices see advertisement.

INTERNATIONAL EXHIBITION OF 1862.—VISITS OF SCHOOLS.

The following is a continuation of the Schools reported to Her Majesty's Commissioners as having entered the Building from the 27th of October to November 1st:—

DATE.	FROM WHAT LOCALITY.	NAME OF SCHOOL.	BY WHOM SENT.	No. of Children from each School.	Total each day.
Oct. 27	Brixton-hill	St. Ann's Asylum	Subscription	7	
,, ,,	Red-hill, Surrey ...	Private	W. Rowney, Esq.	17	
,, ,,	Stone Dartford, Kent.	National	Rev. F. Murray	29	

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* The Annual General Meeting: the Chair will be taken at Four o'clock. No Visitors are admitted to this Meeting.

RETURN OF SCHOOLS (*Continued*).

DATE.	FROM WHAT LOCALITY.	NAME OF SCHOOL.	BY WHOM SENT.	No. of Children from each School.	Total each day.
,, ,,	East Tytherly, Hants.	Endowed	Sir Christ. Rawlins	14	
,, ,,	Leeds	Wortley	Rev. J. Pettitt	25	
,, ,,	Coventry	Black Gift	The Trustees	56	
,, ,,	Shepherd's Bush	British	Own Expense	10	
,, ,,	Bayswater	Kensington-park College	W. A. Davy (Principal)	26	184
,, 28	Horsleydown	St. John's	Rev. H. Vachel and Rev. S. Rolson	54	
,, ,,	Southwark	St. George's Catholic Cathedral	Rev. W. Donell	25	
,, ,,	Wandsworth	Manor House	Own Expense	24	
,, ,,	Westminster	St. Margaret's	Subscription	42	
,, ,,	Duncton, Sussex	Burton	T. Fairbairn, Esq.	40	
,, ,,	Duncton, Sussex	Catholic	T. Fairbairn, Esq.	30	
,, ,,	Dalton	All Saints' Choir	Rev. A. M. Myers	12	
,, ,,	Bedford Chapel	Sunday	George Knox, Esq.	26	253
,, 29	Marylebone	National	Rev. C. J. Eyre	47	
,, ,,	Carshalton	National	Subscription	94	
,, ,,	Streatham-hill, Surrey	Royal St. Ann's	Committee	12	
,, ,,	Sydenham, Kent	Perry-hill House	Mrs. Todd	14	
,, ,,	Hoxton	Ragged	Lady Charlotte Sturt	20	
,, ,,	Rickmansworth	Private	Rev. F. Henson	10	
,, ,,	Tuffnell-park West	St. John's Collegiate	Dr. Sherrin	16	213
,, 30	Surrey	Oatlands	J. G. Sheppard	34	
,, ,,	Stepney	St. Philip's National	J. B. Walmisly	130	
,, ,,	Croydon	St. Andrew's Middle	Rev. J. Fitzwygram	15	
,, ,,	Sloane-street	Hans Town	Subscription	6	
,, ,,	St. Pancras	Industrial	Mr. W. Weeks	20	205
,, 31	Acton	Private	Miss E. Robinson	14	14
Nov. 1	Westbourne-terrace	Private	Miss Millman	18	18

VISITS OF WORKMEN.

The following is a continuation of the return of the number of workmen, mechanics, operatives, and others who have visited the building from the 27th to the 30th of October:—

DATE.	DESCRIPTION OF PERSONS.	FROM WHAT LOCALITY.	BY WHOM SENT.	NUMBER.
Oct. 27	48th Middlesex Rifles	Lincoln's-Inn-Fields	Captain McDonald	18
,, ,,	Tobacco Manufacturers' Workmen	Bartholomew-close	Messrs. Crofton and Rippon	63
,, ,,	Iron and Rag Merchants' Workmen	Bethnal-green	Mr. W. Ward	43
,, ,,	Heywood Amateur Brass Band	Heywood, near Manchester	Heywood Relief Company	14
,, ,,	Brewers' Workmen	Banbury	Banbury Brewing Company	12
,, ,,	Bell Founders	Whitechapel-road	Messrs. George Mears and Co.	15
,, ,,	Furriers	Davies-street, Berkeley-sq.	Mr. Lillicrap	9
,, ,,	Marines and Boys from H. M. Ship "Pembroke"	Sheerness	Subscription	16
,, ,,	Builders' Workmen	St. John's-wood	— Spencer, Esq.	18
,, ,,	Brushmakers	Lisle-street, Soho	Coate and Co.	15
,, 28	Ticket Examiners	Great Eastern Railway	G. Fearn, Esq.	26
,, ,,	Farm Labourers	Wilton, Wilts	Messrs. Rawlance, Taber, Woodcock, Ford, Mayo, Flower, and Bennett	480
,, ,,	Shoe Black Brigade	Notting-hill	J. Erck, Esq.	26
,, ,,	Police	Hull	Watch Committee	28
,, ,,	18th Hussars	Aldershott	Cornet Yeldham	17
,, ,,	Choir Boys of the 2nd Battn. Grenadier Guards	Wellington Barracks	Captain T. Smith	11
,, 29	London Warehousemen employed by Aire & Calder Glass Bottle Company	King William-street, City, and Ratcliffe	Messrs. Breffitt and Co.	34
,, ,,	Patent Shutter Makers	Gate-street, Lincoln's-Inn	Messrs. Clark and Co.	63
,, ,,	Builders	Lower Clapton	Skinners' Brothers	25
,, ,,	Agricultural Labourers	Sawbridgeworth, Herts	Mr. Prout	54
,, ,,	Workmen at Alum Works	Bow Common-lane	A. A. Croll, Esq.	50
,, 30	Inmates of Workhouse	Hampstead	Subscription	31
,, ,,	23rd Company of the Royal Marine Artillery	Portsmouth	Captain Gladstone	31
,, ,,	Workmen at Alum Works	Bow Common-lane	A. A. Croll, Esq.	50
,, ,,	Agricultural Labourers	Great Wigborough, Essex	Subscription	15
,, ,,	Scots Fusileer Guards	Wellington Barracks	The Officers	50
,, ,,	Naturalists' Artists and Assistants	Vere-street, Oxford-street	Messrs. Ward	10
,, ,,	Shilling Clock Makers	Oxford-street	Messrs. Preece and Co.	20
			Total	1,244

THE PRODUCTIONS OF HUNGARY AT THE INTERNATIONAL EXHIBITION.

By Ladislas Korizmics, Vice-President of the Hungarian Exhibition-Committee, Pest.

According to statistical accounts the yearly produce of Hungary, is of—

Wheat	14,655,000	Vienna Metzen.[*]
Rye	15,321,000	,, ,,
Maize	14,506,000	,, ,,
Barley	15,950,000	,, ,,
Oats	24,909,000	,, ,,
Other kinds of cereals	1,425,000	,, ,,
Peas, Beans, Lentils	1,860,000	,, ,,

The agricultural products, which are especially fit for exportation, are—

a. Wheat and the flour made from it.
b. Rape, and Rape-oil.
c. Tobacco.
d. Wine.
e. Wool.
f. Timber.
g. Hemp.

Wheat.

Although the whole quantity of the wheat grown in Hungary (nearly 15,000,000 V. M.) is of good quality, still the wheat grown in the Banat, in the counties of Bács and Fehér, and in the plains adjacent to the river Theiss, is considered the best.

The staple places for the corn trade, are Pest, Mosony, (Wiselburg), Győr (Raab), Törökbecse, Szeged, Nagy, Kanizsa.

Of these places, Pest being the most important market, the prices there may be regarded as the general average. These prices were

in the year 1824	1	florin	21	kreuzers.[†]
,, 1836-1845 ...	1	,,	82	,,
,, 1851	2	,,	86	,,
,, 1854-1861 ...	4	,,	37	,,
,, 1862 (August) ...	4	,,	70	,,

To Pest, comes the corn by railways, and on the Danube; from where it is conveyed to Vienna by the railway on the left bank of the Danube, or more generally by steam and common boats.

From Pest, and that part of Hungary situated on the right side of the river, corn is sent to Trieste by railway. On this line the freightage for a cwt. of wheat is now from Buda to Trieste, 80 kreuzers.

Flour.

Of the Hungarian wheat a superior flour and grit is made, and of the barley groat of a very good quality is produced in large steam-mills, of which the most important are at Pest and Buda, though some very considerable establishments are also to be met with throughout the country.

The following are, besides others, represented at the International Exhibition :—

1. *The Cylinder-mill Association at Pest.* (Prize Medal.)

A.	Table grit, coarse ...	15	florins	20	kreuzers the cwt.[‡]
B.	,, fine ...	15	,,	20	,,
No. 0.	King's flour ...	14	,,	20	,,
1.	Chandler extract	13	,,	20	,,
2.	Baker extract ...	12	,,	—	,,
3.	Flour for rolls, best	10	,,	30	,,
4.	Flour for rolls ...	8	,,	60	,,
5.	Bread flour, best	7	,,	60	,,
6.	Bread flour ...	6	,,	30	,,

The above sorts are sold in sacks of 150 lbs. Each sack costs 1 florin Austrian currency.

2. *Barber and Kluseman at Buda.* (Prize Medal.)

A.	Table grit, coarse ...	15	florins	50	kreuzers the cwt.
B.	,, fine ...	15	,,	—	,,
No. 0.	King's flour ...	14	,,	—	,,
1.	Chandler extract	13	,,	—	,,
2.	Baker extract ...	12	,,	20	,,
3.	Flour for rolls, best	10	,,	30	,,
4.	Flour for rolls	8	,,	60	,,
5.	Bread flour, white	7	,,	60	,,
6.	,, black	6	,,	—	,,

They are sold in sacks of 150 lbs. Each sack costs one florin.

3. *John Blum, at Buda.* (Prize Medal.)

A.	Table grit, coarse ...	15	florins	20	kreuzers the cwt.
B.	,, fine ...	15	,,	20	,,
No. 0.	King's flour ...	14	,,	20	,,
1.	Chandler's extract	13	,,	20	,,
2.	Baker extract ...	12	,,	—	,,
3.	Flour for rolls, best	10	,,	30	,,
4.	Flour for rolls ...	8	,,	70	,,
5.	Bread flour, white	7	,,	50	,,
6.	,, black	6	,,	50	,,
I.	Rye extract... ...	8	,,	50	,,
II.	Rye flour for rolls ...	7	,,	50	,,

The above sorts are sold in sacks weighing 150 lbs. as far as No. 6. Each sack costs one florin Austrian currency.

4. *Werther, F., at Buda.* (Prize Medal.)

No. 0.	Barley groats, coarse	8	florins	50	kreuzers the cwt.
1.	,, fine	9	,,	—	,,
2.	,, ,,	11	,,	—	,,
3.	,, ,,	13	,,	—	,,
4.	,, ,,	15	,,	—	,,
5.	,, ,,	17	,,	—	,,
6.	,, ,,	19	,,	—	,,
7.	,, ,,	21	,,	—	,,
8.	,, ,,	23	,,	—	,,
9.	,, Pearl groats fine	26	,,	—	,,
10.	,, ,, finest	30	,,	—	,,

Sold in sacks weighing 100 lbs. Each sack costs one florin.

5. *Stephen-mill Company at Debreczin.* (Prize Medal.)

A.	Table grit, coarse ...	15	florins	20	kreuzers the cwt.
B.	,, fine ...	15	,,	20	,,
C.	,, middle ...	13	,,	40	,,
No. 0.	King's flour ...	14	,,	20	,,
1.	Chandler extract	13	,,	20	,,
2.	Baker extract ...	12	,,	20	,,
3.	Flour for rolls ...	10	,,	40	,,
4.	Bread flour, white, first quality	8	,,	20	,,
5.	,, second quality	7	,,	—	,,
6.	,, brown	5	,,	40	,,
K L.	Half corn[*] (Kétszeres)	6	,,	70	,,
R L.	Rye flour, first quality	8	,,	—	,,
R L.	,, second ,,	5	,,	60	,,
A K.	Barley groats 00	15	,,	—	,,
,,	,, 0	14	,,	—	,,
,,	,, 1	12	,,	—	,,
,,	,, 2	10	,,	—	,,
,,	,, 3	8	,,	—	,,
,,	,, 4	7	,,	—	,,

For each sack is paid 1 florin 5 kreuzers.

6. *Traytler, L. A., at Arad.* (Honourable mention.)

A.	Table grit, first quality	13	florins	—	kreuzers the cwt.
B.	,, second ,,	13	,,	—	,,
No. 0.	Finest extract ...	12	,,	—	,,
1.	Chandler's extract	10	,,	80	,,
2.	Baker extract ...	9	,,	—	,,

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[*] 1 Metzen = 1·691 bushel.

[†] 1 florin = 100 kreuzers, about 2 shillings.

[‡] 1 English ton = 18 $\frac{14}{100}$ Vienna cwt.

[*] A mixture of wheat and rye, cultivated and reaped simultaneously.

3. Flour, finest ...	7	„	60	„
4. Flour for rolls ...	7	„	—	„
5. Flour for bread, white	6	„	20	„
6. „ black	5	„	60	„

Sold in sacks weighing 150 lbs. Each sack costs one florin.

The flour is carried by the Southern Railway to Trieste, for 1 florin 20 kreuzers per cwt., or for 1 florin 3 kreuzers if for export, which must be made known to the railway directors.

Rape.

The rape or colza is chiefly cultivated on the extensive plains in the counties of Bács, Torontál, Crongrád, Békés, Csanád, Arad, Pest-Solt, Heves-Szolnok, and on the right bank of the Danube in the counties of Fehér, Tolna and Baranya.

The annual crops much depend on meteorological conditions and therefore vary. In the year 1861, the total produce amounted to about 1,000,000 Vienna metzens, while in 1862, it was scarcely one quarter of that quantity.

The price of the metzen was, 1861, 7½ florins; in 1862, 8½ florins. Six florins can be taken as the average.

The central trading staple for rape is Pest.

The greater part of the rape grown in Hungary is exported as rape seed; though there are some establishments where it is pressed for obtaining oil. One of the most important mills is close to Pest, at Rákos-Palota, belonging to the firm Schossberger S. W. and Sons. There are worked up about 160,000 Vienna metzens annually, which yield about 40,000 Vienna cwt. of oil, and 80,000 cwt. of rapeseed cakes (oil-cakes), which are exported in great quantities to England.

The price of these articles are, for 1862:—

a. Double refined oil, the Vienna cwt., cask included, 36 florins. In other years about 27 florins.

b Raw rape oil (Rohes rüböl), 35 florins. In other years, 25 to 26 florins.

c. Machine oil (Maschinen Schmieröl), extensively used instead of the olive oil for oiling machines, 38 florins.

d. Rapeseed cakes, the common food having failed this year, 2½ florins; but in other years about 1½ florins the Austrian cwt.

Linseed cakes are also produced, and considerable quantities exported. The cwt. 4 florins.

Tobacco.

The cultivation of the tobacco plant in Hungary is considerable. Although the manufacture and trade of snuff, tobacco, and cigars is a State monopoly, permission to grow tobacco can be obtained of the authorities, as well as license for its export, hence this favourite occupation of the Magyar is continually on the increase.

For the State purposes a license is given annually for the cultivation of an area of about 75—100,000 yokes (one Hungarian yoke, 1·06 acre), in addition to which is granted a certain area for growing tobacco for export. In the present year the area of tobacco-planting for export amounted to about 8,000 yokes. The chief district for tobacco is situated on the left bank of the Theiss.

The quantity raised on the area reserved for the State manufactories amounts annually to about 750,000 cwt., and on that for export about 80,000 Vienna cwt.; were an impetus given by a greater demand, the production could be doubled or trebled.

The following are the prices fixed by the state factories for the tobacco needed for their own purposes, for the years 1862, 1863, and 1864:—

A. Common leaves.

1. From Debreczen, Szamoshát, Szullok, Nagy-Károly, Szeged, Theiss, moscatel and common garden-grown tobacco, the Austria cwt. without the stalk (Storren).

Selected leaves...	11	florins		
I quality... ...	8	„	50	kreuzers.
II „	6	„	50	„
III „	4	„		

2. From Nagy-Károly and Szullok, with the stalk.

I quality... ...	7	florins,	50	kreuzers.
II „	5	„	50	„
III „	3	„	45	„

3. From Pécs (Fünfkirchen) Leaf (with the stalk).

I quality... ...	6	florins,	50	kreuzers.
II „	5	„		
III „	2	„	75	„

4. From Pécs, stemmed.

Selected leaves...	10	florins.		
I quality... ...	7	„	50	kreuzers.
II „	6	„	—	
III „	3	„	50	„

5. From Cserbely, leaf.

I quality... ...	7	florins,	30	kreuzers.
II „	5	„	25	„
III „	3	„	50	„

6. Cigar covers, all kinds, stemmed.

I quality... ...	21	florins
II „	18	„
III „	14	„

B. Garden leaves.

7. From Csetnek.

I quality...	20	florins.
II „	15	„
III „	8	„

8. Fine leaves stemmed, from Fadd, Vék, O-Gyalla, Debro, Vitnyéd, and first-rate Transylvania.

I quality... ...	14	florins,	50	kreuzers.
II „	11	„		
III „	8	„		

9. Leaves from Vitnyéd, Keszekfalva, Jánoshát, Vicsenheit, Fibisch (in the Banat), Nagy-Dorogh, and the middle fine from Transylvania.

I quality . .	11	florins		
II „ . .	9	„		
III „ . .	6	„	50	kreuzers.

10. The finest selected leaves, tobacco for pipes from the country of Debreczen, 12 florins.

It is to be remarked that the tobacco enumerated under A. is used for cigars and snuffs, while that under B. is for pipe smoking.

By private merchants it is purchased also at different prices according to the places; but

16 florins per Aust. cwt., best quality;
10—12 florins, second quality; and
6—8 florins, the lowest quality,

may be taken as the average prices.[*]

Among the wholesale merchants engaged actually in the export trade may be mentioned:

a. Schossberger, L. W., in Pest, who has taken about 2,000 yokes from the area allotted for the production of tobacco for export.

b. Lederer, brothers,	in Pest,	with	1,500	yokes.
c. Kohn Jzidor	„	„	1,000	„
d. Kohen, brothers	„	„	500	„

It is only lately that the restrictions on the production have ceased, but since that time the tobacco-planting and trade have very much augmented, and besides the above-mentioned firms there are also others engaged in it.

Schossberger has now about 30,000 cwt. for sale, of which one part consists of the most excellent leaves suitable for cigar covers.

Wine.

As regards the production of wine, Hungary is one of the most important countries in Europe. Its annual produce is exceeded only by that of France, while for quality of material it stands unrivalled.

The wines were till now not sufficiently known, because, owing to different causes, only a very small quantity went abroad, and to the same circumstance can, and must be ascribed, that wines perfectly prepared are not to be found in considerable quantities. But still a larger supply is kept in store than hitherto demanded for exportation. The right sources must be applied to, and excellent qualities will be found in great quantities. There are some growers in whose cellars thousands of eimers are stored waiting for purchasers; but there are also some creditable merchants who could supply on demand 15-to 20,000 eimers of good wine.

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[*] According to the latest news the price is increasing.

To give an approximate idea of the scale upon which the production of wine is carried out, it will suffice to mention, that in Hungary, (without Transylvania, Croatia, Esclavonia, and the respective military frontier), to the culture of the wine 591·356 yokes (or per 800 square klafter, 1·182·712 quarters) are allotted; the yearly produce (on a quarter about 20 eimers*) amounts nearly to 24,000,000 eimers; of this, as far as we know our wines up to the present time, about 3,000,000 eimers is of such a quality that by proper management it can become an article of exportation.

Superior wines are produced in the following districts:—

	The Yearly production.	Eimers.
I.	Tokai-Hegyallya in about 19 places ...	268,000
II.	,, the vicinity of it 25 places	130,000
III.	Ménes-Magarát, about 14 places	241,000
IV.	Ruszt and the county of Sopron (Oedenburg) about 19 places	59,000
V.	Somló and the county of Veszprèm in about 7 places	25,000
VI.	Badacson and the environs, of the Lake Balaton, in about 10 places	90,000
VII.	Neszmély and its environs, in about 7 places	80,000
VIII.	Ermellék in the county of Bihar, in about 20 places	240,000
IX.	Eger-Visconta, in about 19 places ...	240,000
X.	Szegzàrd in the county of Tolna in about 13 places	150,000
XI.	Villàny and its environs, in about 11 places	80,000
XII.	County of Baranya, in about 11 places	400,000
XIII.	Buda and the environs, in about 6 places	400,000
XIV.	Pest-Kobànya (Steinbruch), in about 7 places	50,000
XV.	Szerednye, in about 8 places	60,000
XVI.	County of Nogràd, in about 14 places	150,000
XVII.	County of Hont, in about 14 places ...	40,000
XVIII.	County of Posony (Pressburg), in about 11 places	100,000
XIX.	Vàgh-Ujhely, in one place	6,000
XX.	County of Fehér (Stuhlweissenburg), in about 8 places	60,000
XXI.	County of Somogy, in about 10 places	40,000
XXII.	County of Vas, in about 19 places ...	60,000
	Together 272 places; yearly,	2,969,000

The enumerated localities are already known in the country, but there are besides them many others where a superior quality of wine is produced, but which is not sent to the market.

First rate "Ausbruch" and dessert wines are produced in Tokai-Hegyallya and its environs, Ménes-Magyarát Ruszt, Sopron (Oedenburg), Badacson, and the environs of the lake of Balaton.

Excellent red table wines, which can be compared to the best French wines, come from Eger (Erlan), Visonta, Szegzárd, Villány, the county of Baranya, Buda and its environs, Vág-Ujhely, &c.

The best places for white table wines are Magyarát, Somló, the county of Veszprém, Badacson, the environs of the lake of Balaton, Neszmély, Ermellék, Pest-Köbánya (Steinbruch), Szerednye, the counties of Nográd, Hont, Posony (Pressbourg), Fehér, Somogy and Vas (Eisenburg).

The first qualities of the Somló wines, if properly treated, are not inferior to the best southern. Notwithstanding the excellence of their quality Hungarian wines are very cheap; the reason of this is, because they are not exported, and even, as regards England, may be said to be unknown. The present International Exhibition affords the first occasion for the English public to judge of their worth.

The best table wines can now be had in Hungary in great quantities—10, 15, 20 florins the eimer; common good wines for 6, 8, 10 florins.

If English capitalists would join us, and if thus the English market could be secured for our wines, the trade in Hungarian wine would soon be one of the most important and most lucrative.

The freightage per cwt. of wine (which is about the weight of one eimer in cask) on the railway, including also the Channel, as far as London, is at present about 6—7 florins; *viâ* Trieste it is, of course, cheaper, especially if English vessels could carry it as return cargo.

Besides the great quantity and large variety of dessert and table wines, there is a great amount of material fit for distillation, and with a little capital, cognac factories could be established, for this article, as such, or as a means of adjusting the respective wines, to correspond with port or sherry.

WOOL.

Hungary produces every year about 230,000 cwts.* of wool, of which 118,000 cwts. are fine, and 112,000 cwts. common quality

The wool production is represented at the International Exhibition by the following growers:—

1.	Baron Simon Sina	the yearly production	3,085	cwts.
2.	Count Lewis Károlyi	,,	1,031	,,
3.	Prince Philip Batthyanyi	,,	1,000	,,
4.	Counts George Camillo and Aladár Zichy		1,000	,,
5.	Count George Festetics	,,	700	,,
6.	Count Stephen Károlyi	,,	700	,,
7.	The Estates of the Primate of Hungary		500	,,
8.	Count Edmund Zichy	,,	500	,,
9.	Count Maurice Sándor	,,	450	,,
10.	Count Dyonis and Emeric Széchenyi	,,	320	,,
11.	Count Paul Pálffy	,,	280	,,
12.	Prince Saxon-Coburg Gotha	,,	260	,,
13.	Count John Waldstein	,,	100	,,
14.	The Abbey of Csorna	,,	100	,,
15.	Paul Kis de Nemeskèr	,,	80	,,
16.	Count Julius Jankovich	,,	80	,,
17.	Count George Andrássy	,,	70	,,
18.	Count Felix Zichy-Ferraris	,,	70	,,
19.	The Crown-Estate of Old Buda	,,	30	,,
20.	Baron Nicolas Vay	,,	30	,,
21.	Robert Czilchert (Juror)	,,	30	,,
22.	Constantine Gyiokó	,,	28	,,
23.	Edward Egan	,,	10	,,

The staple place for the wool is Pest, where it is (during the fairs held quarterly) bought by foreign merchants, either directly or through the medium of the home merchants.

The greatest part of the fine wool is grown on the estates of the great landowners. B. S. Sina produces now the greatest quantity. A thousand or more cwts. are produced yearly by several land proprietors, as: Count Zichy de Lángh in the county of Fehér (Stuhlweissenburg), C. Lewis Károlyi, C. George Károlyi, Prince Philip Batthányi, and many others.

Less than 1,000, but above 500 cwts. are produced by a great number; and under 500 downwards to 100 by a great many land-owners.

The quality is well represented by the exhibited fleeces, of which a great many have been found entitled to the distinction of a Prize Medal; although they were acknowledged imperfect, owing to the fact that the sheep were shorn for the sake of the Exhibition one-and-a-half months earlier than usual, and also because the washing is not as it should be, the time when it took place having been too cold.

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* 1 Eimer=11·8 gallons.

* 1 Austrian cwt.=100 Austrian pounds=123 English pounds 7 ounces, and 5 drachms.

Forest Products.

The area covered by Forests is nearly one-fourth of the whole land; but it is not equally distributed, and therefore in parts destitute of wood the price is sometimes exceedingly high, whilst in the forest-districts it scarcely can be sold.

The greater forests are to be found in the counties of Arva, Túrocz, Lipto, Máramaros, Trencsén; the upper part of the counties of Zemplén, Ungh and Beregh; and in the counties Krassó, South-Bihar and Arad, the parts continguous to Transylvania. The counties Baranya, Somogy, Veszprém and Somogy abound also in timber; but as regards the export-trade none of the enumerated tracts of land are superior to Esclavonia, being the nearest to the Adriatic.

In the forests are to be found pines, common and turkey oaks, and beeches; in less quantity, maple, alder, ash, and the lime-tree.

The pine is chiefly to be found in the counties of Máramaros, Arva, Turocz, and Liptó; but in less quantity it is spread over a great area, commencing from Pressbourg on the summit of the Carpathian range, as far as the southern end of Hungary in the Banat, and besides that it occurs also in the counties of Baranya and Vas.

On the more temperate mountain chains the beech and oak abound, especially the counties of Krassó and Somogy, which are famous for their beech forests. As timber used in husbandry, it is said that none is superior to the beech.

The plains produce chiefly the turkey and the common oak.

The trade in wood is carried on by means of the rivers, and is most extensively practised on the Theiss, with the wood derived from the forests in Máramaros, Beregh and Ugocsa. Besides that, a considerable trade is carried on on the Szamos, Körös, Berettyó, and more on the Maros. The staple places along the river Theiss are: Tisza-Ujlak, Tisza-Füred, and especially Szolnok and Szeged; on the river Maros: Lippa, Arad and Mako.

Towards the valley of the Danube the greatest part of the wood is transported on the river Vág, from the counties of Arva, Túrocz, Liptó and Trencsén; the staple places being Hradek, Rozsahegy (Rosemberg), Zsolna, Vág-Ujhely, Szered and chiefly Komárom, which place supplies with wood for building purposes the whole country down the Danube as far as the Turkish boundaries.

On the rivers Garan and Jpoly also much wood is conveyed; but none of the rivers is superior in this respect to the Dráva (Drau), for the wood derived from the mountains of Styria and Croatia. A considerable quantity of wood is transported on the Danube, also from Austria and Bavaria to Pest, where a most extensive trade is carried on.

The price of the wood has of late years greatly augmented; the chief causes of this are the great undertakings in building and railroads, where it is used very often as fuel. It may be stated, that the price of the timber is about the quadruple of what it was 15 or 20 years ago; but still many forests can be found, where wood is almost unsaleable for want of means of conveyance.

As an average the price of 1 florin and 1 fl. 20 kr. may be taken for one cubic foot of timber of the first quality for building purposes and for agricultural and domestic utensils. Extraordinary size from 1 fl. 20 kr. to 2 fl.—That is for hard wood, the soft wood is about one-third less in price.

The price of the staves per eimer varies according to size, from 60 to 80 kreuzers.

For the English market, as a suitable place, may be mentioned Sziszek on the river Száva (Save), where the timber, as compared to the prices at Pest, is cheaper from ⅕ to ¼.

Flax and Hfmp.

The flax and hemp might also become articles for exportation.

The northern districts are excellently suited for the growth of flax; especially the counties of Szepes (Zips), Sáros, Arva, Turocz, Liptó, Trencsén, Zolyom, and even Máramaros and Vas.

In the southern parts of Hungary the culture of flax gives place to that of *hemp*. As places producing this material of a superfine quality may be named the county Bács and the southern part of the county Pest-Solt. The production of this place is an article of trade under the name "Apathin hemp,"* and may annually amount to about 150,000 cwt. (Austrian weight). As to the fineness of quality it may be inferior to the hemp of other countries, but as to strength of fibre it yields to none.

The production could be much more extended, the predilection of the people and a good soil being in its favour; it depends only on the demand for exportation.

The price of the hemp is variable, according to the quality. The principal merchants at Pest are J. Birnbaum, an exhibitor, to whom a prize medal was awarded; John Aigler, Michels Brothers, and Joseph Pessl.

The prices at the market of Pest are as follows:—

a. Rough hemp	16½—17	florins the	Vienna cwt.
b. Hemp for ropes	23½	,,	,,
c. Mixed hemp for spinning	29	,,	,,
d. Fine tow.........	10	,,	,,
c. Rough tow	7— 8½	,,	,,

THAMES EMBANKMENT.

The following are the reports just made by Mr. Bazalgette, the chief engineer to the Metropolitan Board of Works:—

North Side.

Gentlemen,—The Thames Embankment Act, and the Plans referred to therein, define in general terms the main features of the work entrusted to this Board for execution. But it remains for the Board to determine with what materials the embankment should be constructed, what should be the depth and character of its foundations, and its solidity and strength; also, what should be the general appearance or design, whether it should be constructed with or without a cofferdam, and the mode of forming the low-level sewer, with its branch connections; and all other matters of detail.

The Act provides that the powers of the Board for the compulsory purchase of property shall not be exercised after the expiration of five years from the passing of the Act; but it does not limit the period for the execution of the work.

Clause 12 provides that, "In carrying the said works and improvements into execution, it shall be lawful for the Board, save as herein otherwise expressly provided, to deviate to any extent not exceeding five feet from the levels defined in the said sections, and the Board shall not deviate beyond the limits of deviation delineated in the said plans without consent of the person through whose lands such deviation shall be made, nor carry the line of embankment wall, as shown in the said plans, further into the said stream of the river than three feet, without the consent of the Conservators signified in writing under the hand of their secretary," which, in the judgment of your solicitor, enables the Board to extend the line of the embankment-wall into the river three feet only beyond that line, as defined on the Parliamentary plans, without the consent of the Conservators of the Thames; or to the limits of deviation with the consent of the Conservators; but under no conditions beyond those limits. The limits of deviation being at a distance of 100 feet.

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* The name of a village in the county of Bács, on the Danube, being also a steamboat station.

The face of the embankment is to commence at the northern abutment of Westminster-bridge, in a line with the existing embankment in front of the Houses of Parliament, and it will extend in a slightly curved line to the northern brick pier of Hungerford-bridge. At Richmond-terrace it will be 220 feet in front of the present high-water line, at Scotland-yard 400 feet, and at Hungerford-bridge 300 feet. From Hungerford-bridge it will continue to the first pier of Waterloo-bridge, and opposite Buckingham-street it will extend 450 feet into the river; opposite Salisbury-street, 300 feet; and opposite Somerset-house, 130 feet. The solid embankment is to terminate on the eastern side of Temple-gardens, where it will extend about 200 feet into the river.

A roadway 100 feet wide is to be formed upon that portion of the embankment nearest the river. From the junction of this roadway with Westminster-bridge it will fall at an inclination of 1 in 80 to the level of the embankment, which is to be 4 feet above Trinity high-water mark. The roadway will pass under Hungerford and Waterloo bridges; and at the east end of Temple-gardens it will be reduced to 70 feet in width, and be carried upon columns rising at an inclination of 1 in 60 to the level of Chatham-place, Blackfriar's-bridge.

The River Thames at London-bridge, has a clear waterway of about 700 feet; at Southwark-bridge the waterway is reduced to 660 feet. It then rapidly expands in width, and will, when the embankment is formed, be 900 feet wide above Blackfriars-bridge; 1,120 feet at Waterloo-bridge; 1,020 feet at Hungerford-bridge, and 900 feet wide at Westminster-bridge.

The tidal water in passing through London and Southwark bridges flows with sufficient velocity to keep the channel of this portion of the river free from doposit; but when allowed to expand and spread itself over nearly double the width of river, as it will still do at Waterloo-bridge, the velocity of the stream is decreased, and a partial and contracted channel for navigation is formed in the north bend of the river; and banks and shoals are deposited on the south side. This will still continue to be the case after the embankment is formed, and these evils might have been much reduced had the embankment been extended out to the second, instead of the first pier of Waterloo-bridge. The bend in the river might thus also have been materially reduced, a more uniform section of river obtained, and eight acres of additional land thereby reclaimed.

The limits of deviation do not, however, extend to the second pier of Waterloo-bridge, and it would be unwise to carry the line of embankment out to the limit of deviation, for it would then leave a narrow channel between the face of the embankment and the second pier of the bridge, and the embankment, unless extended to the second pier, would not admit of the formation of a roadway within the second arch of the bridge. However desirable, therefore, it may be to extend the embankment at this point further into the river, the Board could not do this efficiently within the limits of deviation, and would therefore be obliged to obtain from Parliament fresh powers to enable them properly to effect this improvement. Such a course would necessarily involve a year's delay, and as the Board are not responsible for the defect, they may not deem it prudent to incur the delay.

The approaches or connecting roads between the embankment roadway and the existing streets are to be formed in the following manner:—A roadway not less than 40 feet in width, and with an inclination of not less than 1 in 30, is to be carried in the form of a crescent to the foot of Arundel, Norfolk, and Surrey streets, in the Strand.

A new street is to be formed from Wellington-street, opposite Somerset-house, falling in at an inclination of 1 in 40 under Hungerford-bridge, near to Northumberland-wharf, and connected with Whitehall-place by a prolongation thereof. Branch connecting streets from this new street are to be made in continuation of Cecil-street, at an inclination of 1 in 50; Salisbury-street at an inclination of 1 in 63; George-street at an inclination of 1 in 125; Buckingham-street at an inclination of 1 in 127, and Villiers-street at an inclination of 1 in 60. A street connecting Whitehall, opposite the Horse Guards, with the embankment roadway is to be formed through Whitehall-yard and Whitehall-stairs, nearly on a level.

The approaches to the embankment roadway will require your careful consideration, inasmuch as the usefulness of that roadway will depend mainly on the facilities which are provided for connecting it with the existing lines of thoroughfare. The streets which run at right angles fron the Strand down to the embankment (Norfolk-street excepted) are so narrow and steep as to be very inconvenient as public thoroughfares. Norfolk-street, which forms the best approach, is 40 feet wide, and has an inclination of 1 in 25.

A convenient communication between Charing-cross and the roadway on the embankment should form a prominent feature in the design, and would probably tend to relieve the Strand and Fleet-street more than any other; but provision has not been made for such a line of communication. The most direct and most convenient route that could be suggested would unquestionably be in a direct line through the gardens close to the back of Northumberland-house; but if that should be regarded as too bold and costly an approach, I submit that a very advantageous one may be obtained by purchasing the block of houses between Northumberland and Craven streets, and passing in a curved line from the east corner of Northumberland-house, between Northumberland and Craven streets, on to the embankment roadway. This route, from Charing-cross to the east, would be 400 feet nearer than by Whitehall-place, and 100 feet nearer than along the Strand and down Norfolk-street; and its inclination would be not less than 1 in 56, which is much better than could be obtained by the other routes. It would also most effectually relieve the present thoroughfares where they are most crowded.

I submit, also, that the high level roadway, instead of starting from opposite Somerset-house, in the narrow part of Wellington-street, should commence in the Strand at its junction with Wellington-street, and may be otherwise advantageously modified, as shown upon plans which have been prepared for the consideration of the Board.

These diversions would be more or less beyond the limits of deviation marked upon the deposit plans, and would therefore require the deposit of fresh plans, and a fresh application to Parliament; but inasmuch as the streets cannot be formed until after the embankment is made, there will be time for this without retarding the embankment.

The Act contemplates the filling in behind the embankment, with the materials dredged from the bottom of the river, and clause 16 provides, that the Thames Conservators shall, when called upon by the Board so to do, dredge the river where and how they think best, and deposit the materials where the Board shall point out; and the Board shall pay to the Conservators such sums of money as they shall have actually expended in this work, but if the Conservators should not, within ten days, after having been called upon by the Board so to do, proceed with the dredging, then the Board may, without the consent of the Conservators proceed with this work.

There will be great practical inconvenience in this mode of executing the work. It will be obvious to the Board that although Parliament has given large powers to the Conservators to dredge the bottom of the river, at the request of the Board, the constant interchange of notices and proceedings, to enable a second body to carry out rapidly and effectually the requirements of the Board in regard to this great work, must necessitate great delay and inconvenience. Now the embankment wall and other works might be destroyed by the tides after completion, for the want of sufficient backing, or by reason of a defective mode of filling in, or by delay; and the contractors for the embankment would not have due control over their own contracts. I submit that the only practical mode of performing these works properly, will be by an agreement between the Metropolitan Board of Works and the Conservators of the Thames, to the effect that the Metropolitan Board of Works shall themselves, in the name and on behalf of the Conservators, dredge so much of the river as they shall require for the formation of the embankment, in such places, and to such depths, as shall be pointed out by the Conservators, within prescribed limits; and that the contractors for the embankment shall be bound under their contracts to do this work to the satisfaction of the Board and the Conservators.

Should any difficulty arise in effecting such an arrangement the Board could not depend upon the materials raised from the river for the formation of the embankment, and would be driven to obtain such materials from other sources.

Clause 21 requires that when the Board shall interfere with any existing piers, public stairs, or landing-places now marked by the Watermen's Company, they shall erect other piers, stairs or landing-places, to the satisfaction of the Conservators of the Thames, which, when completed, shall be vested in them.

The borings along the line of embankment are now nearly completed, and the result, up to the present time, indicates that it will be necessary to carry the foundations of the embankment down to the blue clay, which, on the average, will be about 25 feet below the present bed of the river. This will, I believe, be found to be most ecconomically effected by sinking iron caissons, filled with concrete for the foundations, and by raising upon them, from below the level of low-water mark, a solid granite-faced embankment, without the aid of a coffer dam.

The low level sewer will be constructed behind and under the protection of the embankment wall, which will greatly facilitate the formation of those works.

The embankment may probably be advantageously divided into two contracts, but the numerous points which have been touched upon in this preliminary report will require the deliberation of the Board before I receive instructions to mature the designs and prepare the contracts for the execution of the work. The works cannot, however, be carried out until possession is obtained of the property and interests along the foreshore of the river which will be interfered with; and I recommend that arrangements be forthwith made to promote this object, and that the proper officers be instructed to prepare and serve the notices, and push forward this necessarily tedious part of the business without delay.

Surrey Side.

Extract from Minutes of Main Drainage Committee, 14th October, 1862.

The Committee considered further the course to be pursued by the Board, in reference to the report of the Royal Commission on an embankment for the South side of the river, referred by the Board on 8th August last (No. 13).

Resolved,—That the further consideration of the subject be adjourned; that in the meantime the report in question be referred to the engineer, and that he do report thereon to the Committee this day week, and also as to dealing with the fore-shore of the South side of the river, between Westminster and London-bridges.

Gentlemen,—Pursuant to the foregoing instructions, I beg to report that the Thames Embankment Commission have divided this district into three sections; the first extending from Deptford to Westminster-bridge; the second from Westminster-bridge to Vauxhall-bridge; and the third from Vauxhall-bridge to Battersea-park.

With reference to the first section, the Commission have regarded the existing thoroughfares, coupled with the new street now being formed by you, sufficient for the accommodation of the traffic; and they believe that the flooding of those districts may be obviated by a more efficient system of drainage, and consider that no public necessity exists for an embankment for this section. They, however, admit that such an embankment would improve the navigation of the river, increase the wharfage accommodation, and ensure uniformity of design, and recommend that every facility should be afforded to the wharf owners and occupiers to enable them to do this work, should they desire it.

With respect to their second and third sections, they recommend the formation of an embanked roadway from Westminster-bridge to Battersea-park, about 4ft. 6in. above Trinity High Water Mark, and 70ft. wide, and two miles in length; to be on an ornamental viaduct opposite the Houses of Parliament to Bishop's-walk, then on a solid embankment, with the exception of a further length of arching from the London Gas Works to Nine Elms.

They further recommend the dredging of this portion of the bottom of the river to a level five feet below low water, and estimate these works, with the requisite approaches, at £1,100,000.

I submit for your consideration, that a more convenient sub-division of this district will be to regard the distance from Deptford to London-bridge as the first section, from London-bridge to Westminster-bridge as the second section, and from Westminster-bridge to Battersea-park as the third section.

The first section, then, according to the sub-division, has not been referred to me by you; and indeed does not require your immediate consideration, inasmuch as no works are at present contemplated for this section on the North side which would affect the South.

With respect to the second section, viz., from London to Westminster bridges, I am unable to concur in the views arrived at by the Royal Commission, excepting so far as regards there being no necessity for the formation of a roadway along the fore-shore of the river. Indeed, the Commissioners, in admitting that an embankment would improve the navigation of the river and ensure uniformity of design, have themselves made out a case of public necessity for such an embankment; which, however, they do not admit. But there are other, and still more cogent reasons why such an embankment should be, and must eventually be constructed.

It has been stated in evidence before the Commissioners that the existing embankments are defective, and that the low-lying districts behind them are consequently flooded at high tides; and my own personal observation confirms these statements. The foundations of many of these embankments are very shallow and defective, some of them not being more than three feet in depth; so that when the embankment on the North side is completed, and the mud banks and shoals in the river dredged away, and the strength of the tide-way brought over nearer to the South side, the safety of these wharves will be endangered; and they will assuredly, if they are not attended to, be undermined and come down.

For these reasons, I am of opinion that this section of the South side of the river must be embanked to an uniform line; and it cannot be left to the option of the different owners and occupiers of the property to deal with this embankment in detached sections as they think best. I recommend that powers should be given to this Board to construct such an embankment, the cost of which I have estimated at about £250,000; and that the property reclaimed should be given to the adjoining owners, and the Board should have power to charge such property, with a portion of the cost of the formation of the embankment, proportionate to the value and extent of the property so reclaimed and added to their premises.

In this way, the property reclaimed would pay the owners for the cost of reclaiming it, and the Board would receive back the greater portion of the outlay; so that the public would thus derive a great public improvement at a very small cost.

As to the particular mode of raising the money, and adjusting its repayment by the owners of the property improved, the members of the Board, should they adopt this view, are more competent to judge than myself.

The Commissioners have recommended works for the improvement of section No. 3, the main features of which this Board would doubtless desire to see carried out, and the details connected with which will probably be carefully reconsidered before Committees of the Houses of Parliament during the coming Session.

I have the honour, &c.,
(Signed) J. W. BAZALGETTE, Engineer.

NEW SYSTEM OF LIGHTING THEATRES IN PARIS.

On the Place du Châtelet, which is one of the bold openings cut through the mass of buildings of old Paris for the formation of the Boulevard Sebastopol, two new theatres have recently arisen, both claiming high rank in architectural design. These rival structures face each other, from opposite sides of the Place; one being the Théâtre du Châtelet, replacing the *Cirque*, and the other the Théâtre Lyrique. The Théâtre du Châtelet, with which we have to deal at present, exhibits by far the more effective façade, in consequence of the large open gallery or loggia which forms its principal feature. The design of the basement story, with the decorative entrances, is good, and sufficiently massive to form a characteristic support to the loggia above. This last feature is formed of open arcades, which support the upper story; both arcades and the architectural features above being richly decorated with ornamental sculpture of a very superior kind. The loggia of the ceiling, as well as the inner sides of the arcades and the back, are richly decorated with arabesque paintings; and the warmth and colour so obtained, combined with the depth of shadow beneath the arcades, produce an effect which is indisputably fine, and, in northern architecture, quite original; though but a succesful piece of borrowing from an architectural device which is common enough in Italy. This open loggia, or spacious covered balcony, forms an agreeable salle de promenade between the acts; and we recently found it a most agreeable lounge on one of the hot October evenings of this exceptional season.

The interior of this graceful theatre is constructed after a fashion still farther from the vulgar beaten tract than the exterior. There is no architectural proscenium; the tiers of boxes sweeping round in a richly undulated curve till they abut against the sculptured bordering which, from floor to ceiling, frames the front of the stage, as it would a picture. The second innovation occurs in the projecting balcony, which in most French theatres runs round the front of the principal tier of boxes, having an even depth of one, or at most two, rows of seats. In the present instance, however, the balcony feature is made to deepen in the centre, projecting far over the pit, and having, in its deepest part, 10 or 12 rows of seats. Here it is that the greatest amount of light falls, and that toilettes are seen to the greatest advantage. It is a central section of this portion of the house that is destined to be set aside for the imperial family, when visiting the Théâtre du Chatelet. The decorations of the salle also present a general novelty of effect. There is little of that heavy sprawling class of ornament, in impertinently high relief, so common in theatrical decoration; the principal effects being obtained by contrasts of burnished and dead gold, blended together, and subdued by a soft ground of delicate buff, which is relieved, sparingly, by sparkling traces of white. Among that class of ornaments intended to convey some, more or less, appropriate meaning, there are none of those bothering allegories, the pith of which is so difficult to extract; the only ornamental features intended to illustrate, more or less directly, the purpose of the structure being a series of medallions of the great patrons of art in all ages. These are placed on the fronts of the upper tier of boxes, and although the selection has been made in the reign of Napoleon III., former sovereigns of France are not excluded. Francis I. and Louis XIV. are allowed to hold their ground against Napoleon I. and Napoleon III.; though these last appear to have assumed the chief places of honour, flanked as they are by Pericles and Augustus. The last and by far the most important of the novelties of structure and decoration attempted (successfully attempted) in this new theatre, is the entirely original mode of lighting the salle. Not a single chandelier appears, large or small; and yet the house is perfectly lighted, and the richness of the architectural effect, strange to say, seems absolutely to gain by the absence of those glittering accessories of glass and lights, which usually form such principal features in theatrical interiors. In lieu of these we are presented with a ceiling of ground glass, sparingly decorated with elegant arabesques; from above which, and unseen, are jets of gas, arranged in a concentrated mass, which pour down a flood of softened and equalised light through the semi-transparent ceiling, the intensity of which can be heightened or diminished at pleasure. It was at first suggested by some of the art-critics of the French press, that the light so introduced was *not* brilliant—that it produced the effect of imperfect sunlight during an eclipse; in short, that the new system was less advantageous than the old ones. Farther experience has, however, proved its triumphant success, both in an artistic and sanitary point of view; in so much that it is now determined to light the Théâtre Lyrique in the same manner, and a Viennese architect visiting Paris, who has seen it, has at once advised its adoption in the new theatre now building at Vienna. Not only is the glare of the chandelier, by which the view of the stage from some parts of the house was obscured, effectually removed, but the unwholesome heat and noxious fumes produced by a number of gas-lights are also got rid of, a most important improvement, which should not be lost sight of in the construction of new theatres, while it is a system that might, with moderate outlay, be applied to all our existing theatres. When the performance begins, the brilliant lights of the salle are reduced to exactly that point calculated to give just the proper amount of due predominance to the lighting of the stage, without, at the same time, leaving too little light in the house, upon which the full power of light is again thrown between the acts, during which intervals the interest of the toilette, &c., is supposed to be in the ascendant.—*Building News.*

ASSOCIATION FOR THE PREVENTION OF STEAM-BOILER EXPLOSIONS, MANCHESTER.

At the last ordinary monthly meeting of the Executive Committee of this Association, held on Tuesday, October 28th, William Fairbairn, Esq., C.E., F.R.S., in the chair, the chief engineer presented his monthly report, of which the following is an abstract:—

During the past month there have been examined 353 engines and 539 boilers. Of the latter 9 have been examined specially, 9 internally, 48 thoroughly, 473 externally, in which the following defects have been found:—Fracture, 7 (1 dangerous); corrosion, 30 (3 dangerous); safety-valves out of order, 15; water gauges ditto, 7; pressure gauges ditto, 20; feed apparatus ditto, 7; blow-off cocks ditto, 27; furnaces out of shape ditto, 3; blistered plates, 5. Total, 121 (4 dangerous). Boilers without glass water gauges, 8; without pressure gauges, 7; without blow-off cocks, 18; without back pressure valves, 50.

Three explosions have occurred during the past month to boilers not under the inspection of the Association, these boilers were in the iron districts, and of the externally-fired hay stack class; they were reported as having been of original defective construction, being insufficiently stayed. One of these explosions was attended with fatal consequences, the engineman being killed.

INCRUSTATION AND SCUM PIPES.—The number of boilers under inspection which suffer from incrustation is very large; indeed, to escape this inconvenience is quite exceptional. It forms a considerable impediment to satisfactory inspection, since it renders it difficult to ascertain the actual condition of the plates; it sometimes gives a delusive appearance, and leads to undue suspicion of corrosion, but more frequently it conceals defects, since corrosion is often found to be going on under, and to be caused by, the deposit.

In addition to the waste of fuel occasioned by incrustation, the wear and tear of boilers is considerably increased, apart from the effects of over-heating. Thus internally double-flued boilers suffer from the undue longitudinal expansion given to the furnace crowns, which increase the tendency to groove at the front end plate, an action always more or less developed in these boilers, while incrustation renders the use of tubular boilers altogether impracticable in localities not supplied with good water, and thus prevents the more general use of this economical class of boiler.

Although the danger of allowing incrustation to form on plates exposed to the action of the fire is too fully appreciated to need remark, the fact is not so fully recognised that even where no actual cake of deposit is formed, overheating frequently occurs. It is thought that this may, in many cases, be due to the presence of thickening matter held in suspension in the water, and it would be interesting to ascertain by experiment whether the impediment thus presented to the free escape of the steam does not—where the circulation is imperfect, or no such agitation of the boiler takes place as in locomotives when running—lift the water off the plates, and thus cause overheating. Of the fact of overheating occurring where no incrustation is formed, and with an ample supply of water in the boiler at the time, there is no doubt instances are constantly coming under notice, and it may be added that they are chiefly found to take place in boilers externally fired.

Apart from the injury done to the boilers from incrustation, a considerable amount of earthy matter passes over with the steam into the engines, and thus renders necessary the use of an increased amount of tallow for the piston and slides. This, though too frequently lost sight of, is illustrated by the fact that where boilers are fed from brooks, subject, on heavy rains, to sudden torrents which stir up the mud, the engine attendants are in the habit, at such times, of taking the precaution of giving the engine cylinders an extra amount of lubrication, finding the pistons, &c., to clog when this is neglected.

Under ordinary circumstances, the most practical plan for the prevention of incrustation is the adoption of an efficient mode of "blowing-out," and not the use of "boiler compositions." To blow out, however, from one point only, at the bottom of the boiler, which is the general custom, has but a very limited and local effect. This is frequently remedied by the adoption of a perforated pipe, which is connected to the ordinary blow out tap, and carried along the bottom of the boiler from one end to the other. These are technically termed "Topham-pipes," from the name of the patentee, and are generally spoken highly of by those of our members who have adopted them. They are, however, more successful where the sediment being heavy and sludgy falls to the bottom, than where it is of a lighter character, which frequently forms the hardest and most tenacious scale.

From the rapid ebullition that takes place within boilers when under steam, it is found that a greater part, if not the whole, of the sediment set free by evaporation rises to the top of the water, forming a coat of scum, before finally depositing itself upon the furnace tubes or shell; and thus the readiest way of preventing incrustation is to blow out this layer of scum from the surface of the water by means of a scum pipe, before it has an opportunity of settling. There is nothing new or experimental in this; the system has been for years adopted with marine boilers, and there is no reason why its use should not become equally general with stationary ones. Many of our members have already tried it with considerable success, and find, on opening their boilers after a month or six weeks' work, that where they used formerly to be coated with a heavy muddy deposit they are now perfectly clean.

The following is an explanation of the description of pipe adopted:—It is about three or four inches in diameter, having a wing cast to it on each side, so as to form a trough throughout the entire length of the pipe. This pipe is carried within the boiler, from one end to the other, being made in any convenient lengths for introduction at the manhole; it is perforated with small holes on the top all the way along, the aggregate area of the whole number of these holes being equal to that of the pipe itself. The top of the trough is fixed a few inches below the level of the water, so that the scum on the surface may flow over it, when, being guarded from the disturbance of the ebullition, it deposits in the still water above the trough the sedimentary particles held by it in mechanical combination. A tap is fixed to the front end plate of the boiler, in communication with this pipe, by means of which it can be blown out as frequently as is desired, which should not be less than once every two hours, when ebullition is going on. This tap, which need not be more than two inches in diameter, should be entirely of brass, fitted with a gland, and have a neat waste pipe attached, which may be of wrought iron, while also the waste pipes from the glass water gauges may be connected to it, being led immediately under the dead plate, which arrangement is found to be very compact and convenient. The best position for the scum pipe is at the side and not at the centre of the boiler, both on account of facility in fixing, and convenience of getting inside. A single pipe is sufficient.

The above description is not by any means given as if that were the only form of scum pipe that could be advantageously applied. It was designed for the use of the members as being adapted to stationary boilers, simple in construction, affording a large collection area, and being free from any patent right. Upwards of a year's trial has proved it to be successful, and its more general adoption is consequently recommended. These pipes have already been made by the manufacturing engineers of Rochdale, Bolton, Bury, and other places, but are needed more generally, and a drawing at the office is open to inspection for the benefit of the members.

There are other plans in operation which, however, are subject to patent right. One of these consists of a series of vertical pipes, fixed in the centre of the boiler, each pipe having a trumpet mouth, to which a vertical telescope movement is given, to allow for the changes of water level, the movement being effected by a copper ball float, so that the trumpet mouth rises and falls on the changes of water level, like a buoy on the rise and fall of the tide; the object being to keep the mouth of the pipe immediately below the surface of the water, in close proximity to the scum. A second plan consists of a trumpet mouth laid horizontally. Both of these arrangements are reported to give satisfaction, and, whenever opportunity offers, the results of their working will be noted, and particulars of the plan found to be most successful communicated to the members.

Some descriptions of incrustation, however, cannot be entirely removed by any blowing-out apparatus alone, however perfect; in such cases a little carbonate of soda may be added, which many of our members have applied with considerable success. Of the use of this, their experience is decidedly in favour, while the testimony with regard to complicated "boiler compositions" generally, is that they found them expensive, in many cases useless, in others injurious, and have, in the majority of instances, discontinued them altogether. For fuller chemical particulars refer to Dr. Angus Smith's report to the Executive Committee upon the Incrustation in Boilers. The use of soda, without a scum pipe, is found in some cases to induce priming; the soda combining with the grease within the boiler, and producing foaming of the water.

The general adoption of scum pipes is, therefore, confidently recommended to the members, not only for the prevention of incrustation, but also, in order to lengthen the lives of their boilers, as well as to assist the engines in many cases, by preventing priming.

The most radical cure for the prevention of incrustation, though one involving considerably more outlay at the first than the above, will be found in the adoption of dry or "surface condensation," by means of which the boiler is fed with distilled water, the same being used again and again, with the exception of the slight amount lost through leakage. To those who are paying large amounts annually for a supply of town's water, and where the steam is consumed for engine purposes, the adoption of surface condensers is well worthy of serious consideration, not only on account of the saving in the water rates, but also in that of fuel, since non-condensing engines may, by this means, be converted into condensing, which is not at present generally the case where town's water is used.

Home Correspondence.

THE ELEMENTARY EXAMINATIONS

Sir,—Allow me once more to call the attention of the managers of Institutes who read the *Journal*, to the importance of extending so valuable a stimulus to self-improvement to a class of persons who form the majority of the pupils of evening classes, and who have not hitherto been influenced by any practical incentive to perseverance. The Examinations conducted by the Society of Arts have afforded very many substantial advantages to the young men whose previous attainments have qualified them to submit to the ordeal, but the stimulus is more really wanted for those who are below them, who know but little, and for that reason care less. The youth who can scarcely read, or at best very imperfectly, may be told of the benefits which many have derived from the Society's Certificates, but to them the attainment of such a passport to social advancement seems almost hopeless, and the attempt is rarely made. By the Elementary Examinations, however, the chance of success is brought more within the bounds of probability, and for that reason made more truly operative. The certificate being headed, "In connection with the Society of Arts," has a recognised national value, and is thereby made desirable of acquisition, as the stamp of approval for so much having been effected, while it is still more valuable as being the preparatory step to the further Examination which tests the proficiency in certain definite branches of study. It offers the most promising mode of extending the influence and efficiency of that admirable system which has already accomplished so much good. The Society of Arts has commenced the work of offering practical benefits to the members of Mechanics' Institutes, and it should be the object of such Institutes to give the Society full employment.

In this great county the Yorkshire Union of Mechanics' Institutes has sent large bills to all the Institutes, announcing both the Elementary and the Society of Arts' Examinations, giving the several subjects, the time tables, the conditions, and all necessary information, with a request that they should be exhibited in the reading and class rooms; and the West Riding Educational Board has offered to even the smallest Institute, where a responsible person will undertake to superintend the working of the papers, to have them examined and to award the certificates. A similar duty might be undertaken in other districts, if only a few willing and energetic men would devote a little time to the task. The West Riding Educational Board forms a permanent organisation for conducting Examinations, and has been the means of having held in Leeds those of the three principal Universities, the Society of Arts, the Department of Science and Art, and the Elementary. By such an organisation most of the above have been rendered practicable, and it is no little credit to the capital of the West Riding that her fame, which had been hitherto confined to her productions in wool and iron, is now not less distinguished for the numerous educational agencies in which she has taken the lead.

If in some of the great centres where the Society of Arts' Examinations are now held, permanent Local Committees were formed for conducting all Examinations, some additional means might be taken to extend still wider the benefits of the Elementary Examinations, and render them more generally available. In vain will many strive to deserve the honours if no attempts be made by those who alone have the power to bring them within their reach, and this duty will not be very onerous, nor involve a large expenditure of time and money. Every Institute in union with the Society of Arts may by its committee establish a Local Board for Examinations, and those who are already familiar with the duties, as already applied to the more advanced students, have but to do a little more, and by the adoption of the scheme of Elementary Examinations, bring a far greater number within their influence.

The propriety of giving prizes in addition to certificates is one of those questions which may never be satisfactorily settled, there being much to be said on both sides. Where, however, prizes are given, they should be purely local and not altogether dependent on the certificates obtained. The latter should be prominently put forward as the true object of ambition, and the prize offered as a special recognition of proficiency in some definite subject. For the Society's prizes the competition is with the whole kingdom, but local prizes would, by the competition being brought within a limited area, be more attainable, and therefore more effectual as a stimulus to exertion.

I am, &c., BARNETT BLAKE.

Leeds, 20th October, 1862.

MEETINGS FOR THE ENSUING WEEK.

Mon. ...R. Geographical, 8½. "Latest Explorations in Australia, by Landsborough, Walker, McKinlay, Howitt, &c."
Medical, 8½. Mr. Henry Smith, "The Treatment of certain forms of Hemorrhoidal Tumour and Prolapsus, with the description of a New Clamp."
Tues....Syro-Egyptian, 7½. Mr. Samuel Sharpe, "On some Passages in the Old Testament relating to Egypt."
Zoological, 9.
Civil Engineers, 8. Opening Meeting. Mr. R. Crawford, "The Railway System of Germany."

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, October 24th*, 1862.]

Dated 11th October, 1862.

2747. T. Bouch, Edinburgh—Imp. in machinery or apparatus for charging or filling cartridges.
2748. A. V. Newton, 66, Chancery-lane—Imp. in evaporating apparatus applicable for the manufacture of sugar. (A com.)
2749. A. V. Newton, 66, Chancery-lane—Imp. in sewing machines. (A com.)
2750. S. Chatwood, Bolton—Imp. in and connected with fire and thief proof depositories, and locks or fasteners connected therewith, parts of which improvements are also applicable to other purposes of security.
2751. G. Harvey and A. Harvey, jun.—Imp. in boring machinery.
2753. G. Haseltine, 100, Fleet-street—Imp. in "jacks" and screw nuts for attaching thills and poles of waggons and other vehicles to the axletrees of the same. (A com.)
2754. C. McCarthy, New York—Imp. in automatic safety valves.
2755. W. Loeder, 1, New Broad-street—An improved projectile to be used with ordnance of any calibre. (A com.)
2756. C. Thomas, Bristol—Imp. in the manufacture of silicate of soda, or silicate of potash, and in the manufacture of artificial stone.
2758. J. Gumbley, Llantrissent, Glamorganshire—An improved break for vehicles travelling on common roads.
2759. A. I. Mahon, 25, Leinster-square, Rathmines, Dublin—Imp. in propellers and paddle floats, also applicable to the raising and forcing of water or other fluids.

Dated 14th October, 1862.

2761. S. Smith, 204, High Holborn—Imp. in kettles, saucepans, and boilers for domestic or other purposes.
2762. F. G. Grice, West Bromwich—An imp. or imps. in the manufacture of nuts for screwed bolts, and in machinery to be employed in the said manufacture.

2763. E. Suckow and E. Habel, Manchester—Certain imp. in machinery or apparatus for preparing, spinning, and doubling cotton and other fibrous materials.
2764. H. Bridson and J. Alcock, Bolton-le-Moors—Imp. in machinery for folding, measuring, and hooking woven fabrics.
2765. E. Barlow, J. Clough, and F. Hamilton, Bolton-le-Moors—Certain imp. in machinery for driving cotton gins, and for preparing and combing cotton and other fibrous substances.
2767. C. Harratt, Hornsey-lane, Highgate—Imp. in ships' masts.
2768. D. Reid and C. J. Reid, Grey-street, Newcastle-upon-Tyne—Imp. in the mannfacture of cases for watches and other pocket timekeepers.
2769. M. Cartwright, Hoxton—Imp. in plates for artificial teeth.
2770. R. A. Brooman, 166, Fleet-street—Imp. in apparatus for carburetting gas. (A com.)
2771. R. A. Brooman, 166, Fleet-street—Imp. in dressing millstones, and in materials employed therein. (A com.)
2772. E. H. C. Monckton, 5, Thurloe-place, South Kensington—Imp. in coils of induction, and in obtaining and applying power by means of electro-magnetism.
2773. O. J. Showell and J. Showell, Manchester—Imp. in the construction of glass roofs and roof lights.
2775. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in sewing machines. (A com.)

[*From Gazette, October* 31*st*, 1862.]

Dated 25*th July*, 1862.

2110. H. A. Jowett, Sawley, Derbyshire—Imp. in obtaining motive power, and in transmitting the same from place to place, and in apparatus connected therewith.

Dated 11*th September*, 1862.

2500. J. Hemsley, Melbourne, Derbyshire - An improved fabric or material for scarfs, ties, handkerchiefs, and neckerchiefs.

Dated 18*th September*, 1862.

2556. L. Mond, 38 Sidney street, Brompton—An improved method of obtaining hypo-nitric acid and nitric acid from nitrate of soda.

Dated 13*th October*, 1862.

2752. A. F. Gallis, 71, Dean street, Soho—A new method of covering street omnibuses and vehicles of every description, for the purpose of sheltering passengers travelling on the top of the same.

Dated 15*th October*, 1862.

2779. J. Taylor, Oldham—Imp. in temples for looms.
2781. C. De Bergue, Strangeways' Works, Manchester—Imp. in the permanent way of railways.
2782. W. Pope, Cornwall-road, Lambeth—Imp. in coating the sides of ships, batteries, forts, or other places with defensive armour plates.
2783. P. Potenza, Naples—The extraction, preparation, and spinning of the silky fibre contained in the bark of mulberry trees, and the manufacture of the same into textile fabrics.
2784. J. B. G. M. F. Piret, 29, Boulevart St. Martin, Paris—Imp. in lubricating apparatus.
2785. F. F. Prud'homme, 51, Rue de Malt, Paris—Imp. in machinery or apparatus for raising water.
2786. J. Bapty, Leeds—Imp. in apparatus for preparing wool and other fibrous materials.
2787. R. A. Brooman, 166, Fleet-street—Imp. in felting machines, applicable also to the fulling, scouring, and dressing of pure and mixed woollen stuffs. (A com.)
2789. E. A. Cowper, No. 35A, Great George-street, Westminster—Imp. in steam engines.

Dated 16*th October*, 1862.

2790. W. Barningham, Pendleton Iron Works, Manchester—Imp. in the permanent way of railways.
2792. G. T. H. Pattison, Glasgow—Imp. in machinery or apparatus for embossing or finishing woven fabrics.
2793. G. T. H. Pattison, Glasgow—The imparting of an improved surface or appearance to fabrics woven with mixed materials.
2794. H. A. Rèmiere, 52, Rue de l'Arbre-sec, Paris—An improved horse collar.
2796. T. G. Harold, Brooklyn, U.S.—Imp. in locks.
2797. E. Humphrys, Deptford, Kent—Imp. in steering apparatus
2798. H. Ransford, Huron-lodge, West Brompton—Imp. in building ships and other vessels.
2799. J. Cash and J. Cash, jun., Coventry—An imp. in the manufacture of valentines.
2800. J. Robinson, East India-road—Imp. in protecting the submerged portions of iron ships, and in ventilating the cabins and cabin decks in iron ships.
2801. H. Hely, jun., Merchants-quay, Dublin, and C. Mills, Dublin—Imp. in envelopes.

Dated 17*th October*, 1862.

2805. J. Davies and G. Davies, Tipton, Staffordshire—Imp. in rotary engines, rotary pumps, and rotary blowing machines.
2806. W. S. Kennedy, Queen's-road, Bayswater—An improved method of and apparatus for, applying fomentations and other external remedies to the throat.
2807. G. T. Bousfield, Loughborough-park, Brixton—Imp. in the manufacture of iron and steel. (A com.)
2808. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in the prevention or removal of incrustation in or from steam generators. (A com.)

INVENTION WITH COMPLETE SPECIFICATION FILED.

2872. J. Carpendale, Meadow-street, Sheffield—Imp. in the means of producing raised chasing on Britannia and other compressible metals.—25th October, 1862.

PATENTS SEALED.

[*From Gazette, October* 31*st*, 1862.]

October 31*st*.

1287. J. Swallow and J. Allinson.
1289. C. P. A. Douchain.
1291. W. Huntingdon and T. Huntingdon.
1299. R. A. Brooman.
1300. C. F. Whitworth.
1301. M. Paul.
1307. H. Juhel.
1309. E. Ormerod and C. Schiele.
1311. J. M. Herdevin and J. A. Jullien.
1312. T. Snowden.
1314. E. Herdman, A. F. Herdman and J. Herdman.
1321. J. Mellowdew, T. Mellodew, and C. W. Kesselmeyer.
1323. J. Heyworth.
1325. A. Williams.
1327. L. G. Perreaux.
1331. T. F. R. Brindley.
1335. R. Burley.
1337. J. Roscoe.
1341. J. Adcock.
1344. R. Mills.
1345. A. Morel.
1347. P. Chenaillier.
1348. J. Clarke & J. Richmond.
1349. W. Richard & J. Richard.
1351. W. Greaves.
1353. W. Clark.
1355. J. E. Ransome, W. Copping, and L. Landsell.
1358. E. Bourdon.
1359. C. V. F. De Berville.
1365. J. Johnson & A. Chapman.
1367. R. A. Brooman.
1368. J. Combe.
1369. G. T. Bousfield.
1372. D. Marchal and A. C. De Wiart.
1373. J. McCann.
1382. G. C. Grimes.
1385. L. de la Peyrouse.
1389. L. D'Aubreville.
1390. T. K. Mace.
1400. G. C. Haseler.
1440. J. H. Johnson.
1443. W. Clark.
1455. H. Deacon.
1461. A. Nicole.
1466. J. P. Jouvin.
1467. J. Dicker.
1484. A. A. Lamiable.
1492. F. Stocken.
1598. J. Simpson.
1607. J. H. Johnson.
1624. F. Datichy and E. Sabatier.
1699. P. M. Parsons.
1883. C. Cochrane.
2176. W. E. Newton.
2328. C. Callebaut.
2380. W. E. Newton.

[*From Gazette, November* 4*th*, 1862]

November 4*th*.

1378. W. Southwood.
1381. C. Lungley.
1394. T. Fawcett.
1398. F. F. Bolton.
1399. F. J. Bolton.
1412. J. D. Christofini.
1414. H. W. Sambridge.
1432. S. B. Ardrey & S. Beckett.
1438. A. Wormull.
1448. R. M. Latham.
1480. G. Haseltine.
1488. G. Davies.
1535. A. Giles.
1547. A. B. Childs.
1574. J. A. C. N. Delpech.
1594. G. H. Daw.
1801. W. E. Newton.
1955. J. Kidd.
2172. J. Ransom and E. Ransom.
2174. G. T. Bousfield.
2412. J. G. N. Alleyne and J. Roberts.
2413. J. Nickson and T. Waddingham.
2526. A. V. Newton.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[*From Gazette, November* 4*th*, 1862.]

October 28*th*.

2478. I. Brown.

October 29*th*.

2483. R. A. Brooman.
2487. L. Pohl.

October 30*th*.

2503. C. W. Siemens.

October 31*st*.

2491. J. Jones.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[*From Gazette, November* 4*th*, 1862.]

October 27*th*.

2427. H. E. Drayson.
2451. R. Cook.

October 28*th*.

2414. W. Hartley.
2419. W. Naylor.

October 29*th*.

2430. T. S. Grimwade.

October 30*th*.

2450. J. Patterson.

October 31*st*.

2452. W. Staufen.
2484. T. Thomas.

LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Name.	Address.
4519	Oct. 30	Scarf Ring	Simeon Greenberg	Birmingham.
4520	„ 31	Blanch's Improved Compound Rifle Sight	William Harnett Blanch ...	Liverpool.
4521	Nov. 4	Egg Cup and Cover	William Spurrier	Birmingham.